PEDIATRIC PAGE

(Complete for all original application and all efficacy supplements)

NDA/BLA Number:	19445	**Trade Name:**	DEXTROSE 50% INJ PET PLAST ABBOJECT VIAL
Supplement Number:	4	**Generic Name:**	DEXTROSE
Supplement Type:	SE5	**Dosage Form:**	Injectable; Injection
Regulatory Action:	AP	**Proposed Indication:**	Provides for a new strength of Dextrose 25% Injection in a new contanier, a 10 mL Ansyr Plastic syringe. The new strength is to be use for a new sub-population - neonates and infants for approved use as a minimal source of carbohydrates and calories in this population..

IS THERE PEDIATRIC CONTENT IN THIS SUBMISSION? NO

What are the INTENDED Pediatric Age Groups for this submission?

_X_ NeoNates (0-30 Days) ____ Children (25 Months-12 years)
_X_ Infants (1-24 Months) ____ Adolescents (13-16 Years)

Label Status	ADEQUATE Labeling for SOME PEDIATRIC ages
Formulation Status	NO NEW FORMULATION is needed
Studies Needed	No further STUDIES are needed
Study Status	

Are there any Pediatric Phase 4 Commitments in the Action Letter for the Original Submission? NO

COMMENTS & RECOMMENDATIONS:

11-19-98 Supplement was part of a submission that was unbundled for administrative purposes as follows: SE5-004 - New subpopulation neonates and infants for new 25% concentration for Dextrose Injection in plastic Container. SE1-006 - New indication -treatment of acute symptomatic episodes of hypoglycemia in nenates and infants for 25% Dextrose Injection in Plastic Containers.

25% Dextrose in a 10 mL Glass syringe has been marketed by Abbott for 60 years. Approval of 25% Dextrose Injection in a 10 mL plastic syringe for the above indications was based upon textbook reference on the use of dextrose injection for the above indications and for its excellent safety profile (no adverse events reported by Abbott over the entire marketing history for 25% Dextrose in glass contaniers). Justification for using textbook reference as clinical data for NDA submissions in plastic containers in which these same products are currently marketed in glass was communicated to the

Firm in a November 6, 1998, letter from Dr. Murray Lumpkin of this Agency.

This Page was completed based on information from a Project Manager/Consumer Safety Officer, STEPHEN MCCORT

/S/

Signature

11-23-98

Date

APPEARS THIS WAY
ON ORIGINAL

PEDIATRIC PAGE

(Complete for all original application and all efficacy supplements)

NDA/BLA Number:	19445	**Trade Name:**	DEXTROSE 50% INJ PET PLAST ABBOJECT VIAL
Supplement Number:	6	**Generic Name:**	DEXTROSE
Supplement Type:	SE1	**Dosage Form:**	Injectable; Injection
Regulatory Action:	AP	**Proposed Indication:**	New indication- treatment of acute symtomatic episodes of hyoglycemia in the neonate or older infant for a new strength of Dextrose 25% Injection in a new contanier, a 10 mL Ansyr plastic syringe.

IS THERE PEDIATRIC CONTENT IN THIS SUBMISSION? NO

What are the INTENDED Pediatric Age Groups for this submission?

X NeoNates (0-30 Days) ____Children (25 Months-12 years)
X Infants (1-24 Months) ____Adolescents (13-16 Years)

Label Status	ADEQUATE Labeling for SOME PEDIATRIC ages
Formulation Status	NO NEW FORMULATION is needed
Studies Needed	No further STUDIES are needed
Study Status	-

Are there any Pediatric Phase 4 Commitments in the Action Letter for the Original Submission? NO

COMMENTS:

11-19-98 STATUS OF SUPPLEMENT PENDING Supplement part of submission that was unbundled for administrative purposes as follows: SE5-004: New subpopulation - neonates and older infants SE1-006 new indication - treatment of symptomatic acute hypoglycemia in older infants with a new concentation of glucose (25%) in Plastic Container.

25% Dextrose in 10 mL glass syringe syringe has been marketed for 60 years. The approval of this same concentration in plastic was base upon textbook reference on the use of dextrose injection for the above indications. The justification on the use of textbook reference as clinical data was communicated to the firm in a November 6, 1998 letter from Dr. Murray Lumpkin of this Agency.

This Page was completed based on information from a PROJECT MANAGER/CONSUMER SAFETY OFFICER, STEPHEN MCCORT

/S/ 11-23-98

ABBOTT

CERTIFICATION REQUIREMENT FOR ALL APPLICATIONS

FOR APPROVAL OF A DRUG PRODUCT

CONCERNING USING SERVICES OF DEBARRED PERSONS

Under the new law, any application for approval of a drug product submitted on or after June 1, 1992, must include:

> "a certification that the applicant did not and will not use in any capacity the services of any person debarred under subsections (a) or (b) [section 306(a) or (b)], in connection with such application."

Abbott Laboratories certifies that it did not and will not use in any capacity the services of any person debarred under subsections (a) or (b) [section 306(a) or (b)], in connection with this application.

Generic Drug Enforcement Act of 1992
Section 306(k) (1) of the act (21 USC 335a(k) (1)).

Thomas F Willer — Nov. 17, 1998

Thomas F. Willer, Ph.D
Associate Director, Regulatory Affairs
Hospital Products Division
D-389. AP30
Abbott Laboratories
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

Date

11-98f.ttw/62

P.4/7

ABBOTT

Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

November 18, 1998

CENTER FOR DRUG EVALUATION AND RESEARCH
DIVISION OF METABOLISM AND ENDOCRINE
DRUG PRODUCTS, HFD #510
Attn: DOCUMENT CONTROL ROOM #14B-19
5600 Fishers Lane
Rockville, Maryland 20857

ATTENTION: Solomon Sobel, M.D.
Director

VIA FAX (301-827-0878)
(and paper copy)

Re: NDA 19-445 50% Dextrose Injection in PET Abboject Vials, S-004, S-005, S-006

Abbott Laboratories hereby amends the above-referenced supplement to this new drug application for the subject drug product. We are responding to telephone request on November 18, 1998 from Dr. Eric Coleman, Medical Reviewer, to Dr. Thomas Willer, Abbott Laboratories. The Agency has requested three items:

1. Additional textbook references for use of 25% dextrose in children. Please see Exhibit I.
2. Recent sales volume of the current 25% dextrose in 10 mL glass syringes which is a grandfathered product. We include this information in Exhibit II.
3. Review of adverse events for 25% dextrose in 10 mL glass syringes. Abbott Laboratories has not received any adverse event reports.
4. Date of market introduction of 25% dextrose in 10 mL glass syringes. This grandfathered product has been marketed for many years. I have been unable to identify the exact year since it was so long ago.

We trust that this information is complete and that these supplements can be approved for 25% dextrose in plastic syringes to be approved. Please contact me if you need additional assistance or contact Dr. Jessie Lee, 847-937-5513.

Sincerely,

ABBOTT LABORATORIES

Thomas F. Willer

Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
Hospital Products Division
Phone: (847) 937-6845
Fax: (847) 938-7867
Internet: WILLETF@hpd.abbott.com
TFW:tw

g:11-98f.tfw/66 - Attachment

MEMO of TELECON

DATE and TIME: 11/19/98/10:30 a.m. EST

BETWEEN: Dr. Eric Colman and Dr. Tom Willer, Abbott Laboratories

SUBJECT: Labeling changes to 25% dextrose injection in plastic syringe

During this conversation I made several recommendations for labeling changes:

1. **Clinical Pharmacology** – recommend changing the definition of hypoglycemia from < 30mg/dl in the neonate and < 50mg/dl in older infants to < 40mg/dl.

2. **Precautions** - I recommend that the following be inserted as the first paragraph: "frequent monitoring of serum glucose concentrations is required when intravenous dextrose is given to pediatric patients, particularly neonates and low birth weight infants."

3. **Carcinogenesis, Mutagenesis, Impairment of Fertility** – Insert 25% dextrose between with xx solutions.

4. **Dosage and Administration** – recommend inserting the following after the first sentence: " When possible, glucose concentration of greater than 12% should be administered by central vein to reduce the risk for phlebitis and thrombosis." Also recommend that the following statement be included as a second paragraph: "The dosage and constant infusion rate of intravenous dextrose must be selected with caution, particularly in neonates and low birth weight infants, because of the increased risk of hyperglycemia/hypoglycemia."

Dr. Willer accepted all the recommended changes and will submit these changes in writing.

ABBOTT

Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

November 18, 1998

BE

CENTER FOR DRUG EVALUATION AND RESEARCH
DIVISION OF METABOLISM AND ENDOCRINE
DRUG PRODUCTS, HFD #510
Attn: DOCUMENT CONTROL ROOM #14B-19
5600 Fishers Lane
Rockville, Maryland 20857

ATTENTION: Solomon Sobel, M.D.
Director

VIA FAX (301-827-0878)
(and paper copy)

Re: NDA 19-445 50% Dextrose Injection in PET Abboject Vials, S-004, S-005, S-006

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1. Additional textbook references for use of 25% dextrose in children. Please see Exhibit I.
2. Recent sales volume of the current 25% dextrose in 10 mL glass syringes which is a grandfathered product. We include this information in Exhibit II.
3. Review of adverse events for 25% dextrose in 10 mL glass syringes. Abbott Laboratories has not received any adverse event reports.
4. Date of market introduction of 25% dextrose in 10 mL glass syringes. This grandfathered product has been marketed for many years. I have been unable to identify the exact year since it was so long ago.

We trust that this information is complete and that these supplements can be approved for 25% dextrose in plastic syringes to be approved. Please contact me if you need additional assistance or contact Dr. Jessie Lee, 847-937-5513.

Sincerely,

ABBOTT LABORATORIES

Thomas F. Willer

APPEARS THIS WAY
ON ORIGINAL

Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
Hospital Products Division
Phone: (847) 937-6845
Fax: (847) 938-7867
Internet: WILLETF@hpd.abbott.com
TFW:tw

g:11-98f.tfw/66 - Attachment

EXHIBIT I

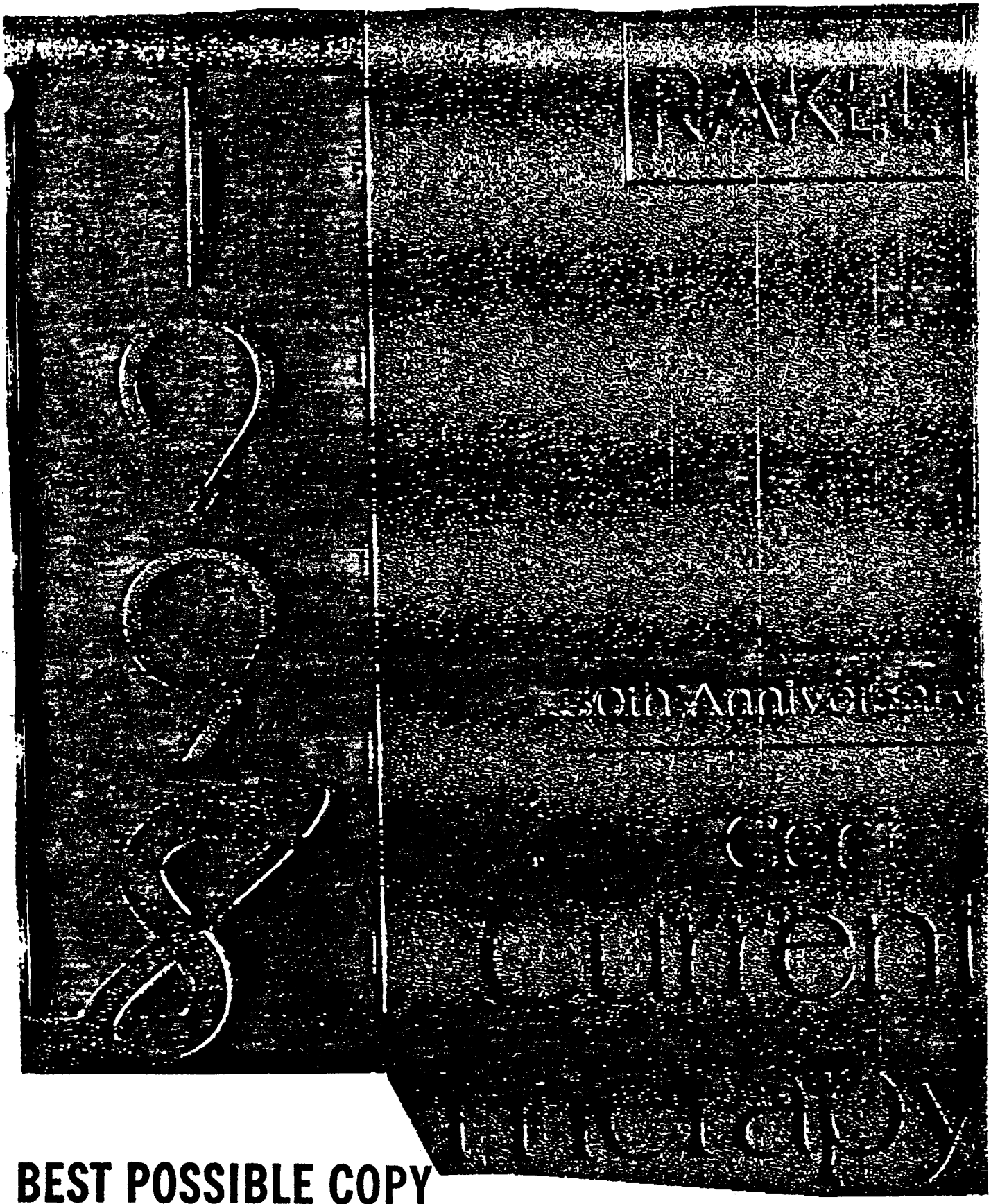
TEXTBOOK REFERENCE

FOR USE OF 25% DEXTROSE IN CHILDREN

NOTE

THIS REFERENCE IS FROM 1998 CONN'S CURRENT THERAPY.

PLEASE SEE PAGE 1205.



LATEST APPROVED METHODS OF TREATMENT FOR THE PRACTICING PHYSICIAN

Edited by

ROBERT E. RAKEL, M.D.

Professor, Department of Family and Community Medicine
Baylor College of Medicine, Houston, Texas

W.B. SAUNDERS COMPANY
A Division of Harcourt Brace & Company
Philadelphia London Toronto Montreal Sydney Tokyo

TABLE 14. Plasma Concentrations Above Which Removal by Extracorporeal Measures Can Be Indicated*

Drug	Plasma Concentration	Protein Binding (%)	Vd (L/kg)	Method of Choice†
Amanitin	Not available	25	1.0	HP
Ethanol	500–700 mg/dL	0	0.3	HD
Ethchlorvynol	150 μg/mL	35–50	3–4	HP
Ethylene glycol	25–50 μg/mL	0	0.6	HD
Glutethimide	100 μg/mL	50	2.7	HP
Isopropyl alcohol	400 mg/dL	0	0.7	HD
Lithium	4 mEq/L	0	0.7	HD
Meprobamate	100 μg/mL	0	NA	HP
Methanol	50 mg/dL	0	0.7	HD
Methaqualone	40 μg/dL	20–60	6.0	HP
Other barbiturates	50 μg/dL	50	0–1	HP
Paraquat	0.1 mg/dL	Poor	2.8	HP > HD
Phenobarbital	100 μg/dL	50	0.9	HP > HD
Salicylates	80–100 mg/dL	90	0.2	HD > HP
Theophylline		0	0.5	
Chronic	40–60 μg/mL			HP
Acute	80–100 μg/mL			HP
Trichloroethanol	250 μg/mL	70	0.6	HP

*In mixed or chronic drug [illegible], extracorporeal measures may be considered at lower drug concentrations.
†HP = hemoperfusion; HD = hemodialysis. [illegible] hemoperfusion preferred over hemodialysis.
Modified from Winchester JF: Active methods for [illegible] Winchester JF (eds): Clinical Management of Poisoning and Drug Overdose, 2nd ed. Philadelphia, WB Saunders Co, 1990, pp 145–167; [illegible] Pinfold DA: Role of hemodialysis and hemoperfusion in the treatment of intoxications. Contemp Manage Crit Care 61–71, 1990.

moved 30%); levothyroxine (removed 30%); salicylate (removed 10%); and digoxin, phenobarbital, prednisolone, and tobramycin (removed less than 10%). Complications include infection, allergic reactions including anaphylaxis, hemorrhagic disorders, thrombocytopenia, embolus and thrombus, hyper- and hypovolemia, dysrhythmias, syncope, tetany, paresthesia, pneumothorax, adult respiratory distress syndrome, and seizures.

Supportive Care, Observation, and Therapy of Complications

The Comatose Patient or Patient with Altered Mental Status

If airway protective reflexes are absent, endotracheal intubation is indicated. If respirations are ineffective, ventilate with 100% oxygen. If a cyanotic patient fails to respond to oxygen, consider methemoglobinemia. Perform a reagent strip test for blood glucose to detect hypoglycemia and send the specimen to the laboratory for confirmation.

Glucose. Administer glucose if the glucose reagent strip visually reads less than 150 mg per dL. Venous rather than capillary blood should be used for the reagent strip if the patient is in shock or is hypotensive.

Hypoglycemia accompanies many poisonings, including those with ethanol (especially in children), clonidine (Catapres), insulin, organophosphates, salicylates, sulfonylureas, and the fruit or seed of a Jamaican plant called akee. If hypoglycemia is present or suspected, administer glucose immediately as an intravenous (IV) bolus in the following dosages: glucose, 10% glucose (5 mL per kg) [illegible] glucose at 0.25 gram per kg (2 mL per kg); and adults, 50% glucose at 0.5 gram per kg (1 mL per kg).

Large amounts of glucose given rapidly to nondiabetic patients may cause transient reactive hypoglycemia and hyperkalemia and may accentuate damage in ischemic cerebrovascular and cardiac tissue. If focal neurologic signs are present, it may be prudent to withhold glucose, because hypoglycemia rarely causes focal signs (<10%).

Thiamine. This agent is administered to avoid precipitating the thiamine deficiency encephalopathy (Wernicke-Korsakoff syndrome) in alcohol abusers and in malnourished patients. The overall incidence of thiamine deficiency in ethanol abusers is 12%. Thiamine at 100 mg IV should be administered around the time of the glucose administration but not necessarily before the glucose, because it is more important to correct the hypoglycemia. The clinician should be prepared to manage anaphylaxis associated with thiamine, but it is extremely rare.

Naloxone. This reverses CNS and respiratory depression, miosis, bradycardia, and decreased GI peristalsis caused by opioids acting through mu, kappa, and delta receptors. It also affects endogenous opioid peptides (endorphins and enkephalins), which accounts for the variable responses reported in intoxications with ethanol, BZPs, clonidine, captopril (Capoten), and valproic acid and in spinal cord injuries. There is a high sensitivity for predicting a response if pinpoint pupils and circumstantial evidence of opioid abuse (e.g., track marks) are present.

In suspected overdose in a child younger than 5 years, administer IV naloxone 0.1 mg per kg up to 2 mg. In older children and adults administer 2 mg every 2 minutes for 5 doses up to a total of 10 mg. Naloxone can also be administered into an endotra-

6

EXHIBIT II

SALES VOLUME

OF THE CURRENT 25% DEXTROSE INJECTION

IN 10 ML GLASS SYRINGES

1 PAGES REDACTED

CONTAINED TRADE SECRETS and/or CONFIDENTIAL/ COMMERCIAL INFORMATION

ABBOTT

NDA SUPPL AMENDMENT ORIG

Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

SCF-005
BC

July 23, 1998

CENTER FOR DRUG EVALUATION AND RESEARCH
DIVISION OF METABOLISM AND ENDOCRINE
DRUG PRODUCTS, HFD #510
Attn: DOCUMENT CONTROL ROOM #14B-19
5600 Fishers Lane
Rockville, Maryland 20857

ATTENTION: Solomon Sobel, M.D.
Director

VIA FAX (301) 443-9282
(and paper copy)

Re:

NDA 19-445 50% Dextrose Injection in PET Abboject Vials, S-005

Abbott Laboratories hereby amends the above-referenced supplement to the new drug application, which provided for packaging the subject drug in plastic syringes. We are responding to a telephone request on July 22, 1998 from David Lewis, FDA Review Chemist, to Thomas Willer, Abbott Laboratories. The Agency requested a change in the previously submitted post-approval marketed product stability protocol to retain the full number of test stations after the first three lots are placed on stability, namely to retain testing at initial, 3, 6, 9, 12, 18, and 24 months. We provide revised stability protocol(s) with this change. Please see Exhibit I.

We trust that this submission is complete and that the supplement may now be approved. Please telephone me at your earliest convenience if I may be of further assistance.

Sincerely,

ABBOTT LABORATORIES

Thomas F. Willer

Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
Hospital Products Division
Phone: (847) 937-6845
Fax: (847) 938-7867
Internet: WILLETF@hpd.abbott.com

REVIEWS COMPLETED

CSO ACTION:
☐ LETTER ☒ N.A.I. ☐ MEMO

/S/
CSO INITIALS 11-5-98 DATE

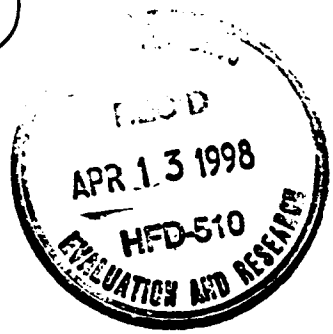
TFW:tw

g:7-98f.tfw/22
Attachment

ABBOTT

Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

April 8, 1998



CENTER FOR DRUG EVALUATION AND RESEARCH
DIVISION OF METABOLISM AND ENDOCRINE
DRUG PRODUCTS, HFD #510
Attn: DOCUMENT CONTROL ROOM #14B-19
5600 Fishers Lane
Rockville, Maryland 20857

ATTENTION: Solomon Sobel, M.D.
Director

Via Fax 301-443-9282
(And Paper Copy)

Re: NDA 19445 Dextrose Injection in Plastic Vials, S-004, S-005, S-006

Abbott Laboratories hereby amends the above-referenced supplements to this new drug application to provide for new fill sizes in polypropylene plastic syringes. We are responding to a telephone request from Mr. Steve McCort, FDA, to Dr. Thomas Willer, Abbott Laboratories, on April 7, 1998. As part of its review of the medical justification for this product, the Agency requested a copy of the package insert for 25% Dextrose Injection, USP. This insert was referenced in the amendment dated April 3, 1998. Abbott currently markets this product in a glass Abboject® syringe. It is a grandfathered drug product. Per this request, we attach a copy of the insert in Exhibit I.

Please telephone me if I can be of further service.

Sincerely,

ABBOTT LABORATORIES

Thomas F. Willer

APPEARS THIS WAY
ON ORIGINAL

Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
Hospital Products Division
Phone: (847) 937-6845
Fax: (847) 938-7867
Internet: WILLETF@hpd.abbott.com

TFW:tw

g:4-98f.tfw/46
Attachment

EXHIBIT I

CURRENT PACKAGE INSERT FOR

25% DEXTROSE INJECTION, USP

IN GLASS ABBOJECT® SYRINGES

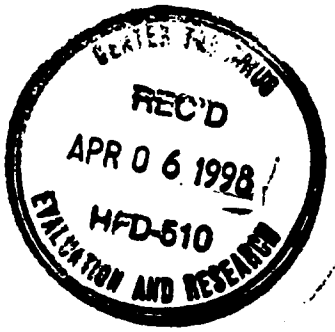
2 Page(s) Redacted

DRAFT LABELING

ABBOTT

NDA SUPPL AMEND
BC
S-004
S-005
S-006

Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537



April 3, 1998

CENTER FOR DRUG EVALUATION AND RESEARCH
DIVISION OF METABOLISM AND ENDOCRINE
DRUG PRODUCTS, HFD #510
Attn: DOCUMENT CONTROL ROOM #14B-19
5600 Fishers Lane
Rockville, Maryland 20857

ATTENTION: Solomon Sobel, M.D. Via FAX 301-443-9282
Director (And Paper Copy)

RE: NDA 19-445 Dextrose Injection, S-004, S-005, S-006, List 1775, 10 mL Plastic Syringe

Abbott Laboratories hereby amends the above-referenced supplement to this new drug application to provide for the product packaged in a new polypropylene plastic syringe. We are responding to the Agency's letter dated March 1, 1998 which made the following comments:

COMMENT: **"MEDICAL**
The New Drug Application 19-445 (25% dextrose injection) is indicated in the treatment of acute symptomatic episodes of hypoglycemia in the neonate or older infant in support of the safe use of this product. Please submit safety data for the neonate and infant populations; literature will suffice. Supportive data should be consistent with the dosing instructions included in the proposed labeling."

RESPONSE: Abbott Laboratories manufactures 25% Dextrose Injection in glass containers. A review of safety data for this product for the past decade revealed no reported adverse events. With respect to treatment of acute symptomatic episodes of hypoglycemia in neonate or older infants, we prepared a comparison chart of adults and neonates/infants. Please see Exhibit I.

COMMENT: **BIOPHARMACEUTICS:**

1. **Provide information regarding the formulation of the 50% dextrose product in plastic and the 25% dextrose product in glass.**

Please provide any bioavailability or pharmacokinetic data for the 50% Dextrose Injection in plastic, the 25% Dextrose Injection in either plastic or glass in pediatric populations specifically, neonates/infants. Along with this information, supply information verifying that an acceptable assay exists for measuring blood levels of dextrose."

RESPONSE: We provide the requested formulation information in Exhibit II. With respect to Bioavailability for I.V. administration is 100% in both pediatric/neonate population. No clinical studies are planned in support of this product.

We trust that this submission is complete and may now be approved. Please telephone me at your earliest convenience if I can provide you with any clarification.

Sincerely,

ABBOTT LABORATORIES

Thomas F. Willer

Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
Hospital Products Division
Phone: (847) 937-6845
Fax: (847) 938-7867
Internet: WILLETF@hpd.abbott.com

APPEARS THIS WAY
ON ORIGINAL

TFW:tw

g:3-98f.tfw/13
Attachment

EXHIBIT I

COMPARISON CHART OF ADULTS AND NEONATES/INFANTS

HYPOGLYCEMIA IN ADULTS AND INFANTS/NEONATES

COMPARISON	ADULTS	INFANTS/NEONATES
Common Etiologies	Usually due to excess insulin	Neonatal small for gestational age and premature infants, diabetic mothers, insulinomas, erythroblastosis fetalis, toxemic mothers, genetic defects
Symptoms	sweating tachycardia, palpitations, tremor; Below 40 mg/dL-headache, confusion, irritability, seizures	Tremors, apathy, cyanosis, seizures, sweating, apnea, hypothermia
Glucose Homeostasis	Glycogenolysis in the immediate postfeeding period and gluconeogenesis several hours after meals	Hormonal changes at birth. Early postnatal period glucagon secretion favored at the expense of insulin secretion. Enzyme changes in perinatal period also contribute to transition from dependence on maternal glucose to extrauterine autonomy. Older infants analogous to adults
Treatment	For insulin-induced hypoglycemia, 20 to 50 mL of a 50% **dextrose** solution is usually adequate. Repeated doses may be required in severe cases.	Neonate-250 to 500 mg to control acute symptomatic hypoglycemia(tremors, convulsions, etc.) by slow intravenous injection. Larger or repeat single doses may be required in severe cases or older infants. Subsequent continuous infusion of 10% dextrose injection may be needed to stabilize blood glucose levels.
Monitoring	Blood glucose prior to injection	As for adults
Adverse reactions	Mental confusion from excessively rapid injection. Solution or technique related (phlebitis, febrile response, infection at injection site, extravasation)	As for adults

References

1. DiPiro JT et al eds. Pharmacotherapy: A Pathophysiologic Approach, Appleton and Lange, Stamford, 1997, p. 1503

2. Behrman RE et al eds. Nelson Textbook of Pediatrics, W.B. Saunders, Philadelphia, 1992, pp 411-12, 494-494.

3. Package Insert. Infant 25% Dextrose Injection, USP (Abbott) 11/93.

4. Package Insert 50% Dextrose Injection, USP (Abbott) 2/94.

EXHIBIT II

FORMULATION INFORMATION

NOTE

Per Agency request, we include herein the formulas for:

1. 50 % Dextrose Injection in a plastic container

2. 25% Dextrose Injection in a glass container (Abboject® syringe)

2 Page(s) Redacted

MEMO TO THE FILE

NDA 19-445/ SE5-004, SCF-005, SE1-006 **20 November 1998**
25% Dextrose in 10 mL Ansyr plastic syringe

NDA 19-445 is approved for 50% Dextrose. These supplements provide for a new strength, 25%, and new pediatric uses.

The manufacturing information for the new strength (25%) and new container (10 mL Ansyr plastic syringe) in SCF-005 is being incorporated into S-004 and S-006. Therefore, the supplement number **S-005** is being canceled, but the information and reviews in S-005 are incorporated by reference in S-004 and S-006.

As a result of this administrative action, the remaining supplements provide for the following:

S-004 provides for a new population (neonates and older infants) and new strength (25% dextrose) and a new container (10 mL Ansyr plastic syringe) for an indication approved for adults in 50 % dextrose; i.e., as a source of carbohydrate calories in total parenteral nutrition.

S-006 provides for a new indication (treatment of hypoglycemia) in neonates and older infants in the new strength (25%) dextrose in a new container (10 mL Ansyr plastic syringe).

/S/

APPEARS THIS WAY
ON ORIGINAL

Enid Galliers
CPMS, DMEDP

cc: Orig. NDA 19-445
HFD-510/Division file
HFD-510/SMcCort/EColman/DLewis/DWu

APPEARS THIS WAY
ON ORIGINAL

DDR-510:
Please enter in COMIS both "BC" amendments to S-005 in both S-004 and S-006 and then **CANCEL S-005.**

Dr. C. Colman

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
Rockville MD 20857

November 6, 1998

Thomas F. Willer, Ph.D.
Manager, Regulatory Affairs
Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, IL 60064-3537

Dear Dr. Willer:

This letter is in response to your inquiry regarding the regulatory requirements that should be followed to gain marketing approval for changing certain parenteral drug products from glass to plastic syringe containers. See also the attached letter dated September 3, 1996, in which Roger Williams, M.D. addressed a similar matter for your attention.

After careful consideration, we have the following observations:

1. Drug products contained in plastic are deemed by regulation to be "new drugs". See 21 CFR 310.502 (a) (10) and 310.509 (a). The "new drug" status of parenteral drug products in plastic containers applies to both large and small volume products. Id.; see also CDER MAPP 6020.2 "Applications for Parenteral Products in Plastic Immediate Containers" (copy of MAPP enclosed).

2. As "new drugs", such products can only be introduced or delivered for introduction into interstate commerce if they are the subject of an approved application filed under section 505(b) or 505(j) of the Federal Food, Drug and Cosmetic Act.

3. For each of the products under discussion, an abbreviated application may be filed under section 505(j) if a "listed drug" as defined in section 505(j)(7) can be identified for the drug product. It is our understanding that there are no "listed drugs" for the products you are seeking to market.

4. Therefore, to gain the necessary market approval for the drug products under discussion, you would be expected to file an application under section 505(b) of the Act. Based on your description of the products, including the apparent substantial marketing history, you should consider whether an application under section 505(b)(2), which may sometimes may consist of simple literature/medical textbook

information to support safety and efficacy, may be feasible for each of these drug products.

If you have any questions or comments concerning this matter please contact Ms. Patricia DeSantis, Drug Review Program Director, by phone at (301) 594-5400.

Sincerely,

/S/

Murray M. Lumpkin, M.D.
Deputy Center Director (Review Management)
Center for Drug Evaluation and Research

APPEARS THIS WAY

Enclosures

APPEARS THIS WAY
ON ORIGINAL

REVIEW MANAGEMENT

APPLICATIONS FOR PARENTERAL PRODUCTS IN PLASTIC IMMEDIATE CONTAINERS

CONTENTS

PURPOSE This MAPP describes the types of new drug application that will satisfy the requirements in 21 CFR 310.509(a) for a new drug application for approval of any parenteral drug product to be packaged in a plastic immediate container.

BACKGROUND

The Code of Federal Regulations, Title 21, Section 310.509(a) established that any parenteral drug product packaged in a plastic immediate container is a new drug under section 201(p) of the Federal Food, Drug, and Cosmetic Act (FD&C Act) and requires an approved new drug application as a condition for marketing. Section 310.509 took effect when 505(b) was the only provision in the FD&C Act for submission of a new drug application. The subsequent enactment of the Drug Price Competition and Patent Term Restoration Act of 1984 (Waxman-Hatch Amendments) replaced 505(b) with 505(b)(1), 505(b)(2) and 505(j), thereby creating three distinct types of applications for approval of new drugs depending on the nature and the source of the evidence required to demonstrate the safety and effectiveness of the new drug product.

REFERENCES

- 21 CFR 310.509 Parenteral Drug Products in Plastic Containers
- 21 CFR 314.3 Definitions

DEFINITIONS

- **Application.** As defined under 21 CFR 314.3, includes all amendments and supplements to the application.
- **Parenteral Drug Product.** A sterile solution intended for administration by injection, internal irrigation, or for use in dialysis procedures.
- **Small Volume Parenteral** (SVP). A parenteral drug product packaged in a volume of less than 100 mL.
- **Large Volume Parenteral** ((LVP). A parenteral product packaged in a volume of 100 mL or more.
- **Limited Confirmatory Testing.** Simple studies intended to rule out unlikely problems. In some cases limited confirmatory testing may include acute animal studies. However, a study to answer basic safety or effectiveness questions or a study that would require substantial scientific review would not be considered limited confirmatory testing.

POLICY

- The requirements for a "new drug application" under 21 CFR 314.509(a) may be satisfied by a new drug application (NDA) submitted in accordance with section 505(b)(1) or section 505(b)(2), an abbreviated new drug application (ANDA) submitted in accordance with section 505(j) or, for antibiotics, an NDA or abbreviated antibiotic application (AADA) submitted in accordance with section 507 of the FD&C Act, or by a supplement to a previously approved application of one of these types.
- An application for approval of a parenteral product in a plastic immediate container may be filed as an ANDA under section 505(j) or, for antibiotics, an AADA under section 507 provided that, 1) the product duplicates an approved product listed in the current edition of *Approved Drug Products with Therapeutic Equivalence Evaluations* ("The Orange Book") and 2) approval of the product in the plastic immediate container does not require studies beyond limited confirmatory testing and the testing described in the USP.
- An application for approval of a parenteral product in a plastic immediate container for which the container requires animal studies beyond limited confirmatory testing and the testing described in the USP to show that the drug

product is safe must be submitted as an NDA under section 505(b) or, for antibiotics, under section 507.

- An application for approval of a parenteral product in a plastic immediate container containing an active ingredient or a combination of active ingredients not previously approved under an application submitted under section 505(b) or section 507, including an application for a product currently marketed in a glass container for which there is no reference listed drug, should be filed as an NDA under section 505(b) or 507 (as appropriate).

  1. Applications filed for approval of new drugs under 505(b) and non-abbreviated applications under 507 are required to contain evidence of safety and effectiveness. Published reports may be adequate for certain applications. However, reference to general recognition of safety and effectiveness is an inadequate basis for approval of a new drug.

  2. Applications filed under 505(b) or 507 for parenteral products in plastic containers that meet the definition of a "human drug application" in the Prescription Drug User Fee Act of 1992 (PDUFA) are subject to user fees.

- This policy applies to both large volume parenteral products and small volume parenteral products.

- This policy applies to applications for parenteral products packaged in plastic immediate containers regardless of whether the plastic material has been previously used to package an approved drug product.

EFFECTIVE DATE

This MAPP is effective upon date of publication.

NDA 19-445/SE1-006 Tx hypoglycemia in peds. 29 Oct. 1998
NDA 19-445/SE5-004 Use in ped. population
NDA 19-445/SCP-005 New concentration, new plastic syringe
25% dextrose

Telecon

Between: Tom Willer,PhD, Abbott Labs
Mary Barton(?),MD(?) Abbott Labs
and Eric Colman, MO, DMEDP
Enid Galliers, CPMS, DMEDP

Background: This discussion involved the status of these pending supplements due Nov. 25. Several times previously, FDA asked ABBOTT to provide literature support for the use of 25% dextrose children. The firm's latest submission contained abstracts that were unresponsive to FDA's request. The submission stated that the search went back to 1966.

Discussion: Dr. Colman told Drs. Willer and Barton that he had to have some data to support the safe and effective use of 25% dextrose in children and that the referenced submission did not provide that. I told them that the issue of supporting data for grandfathered products [that were submitted in NDAs] had been taken several times at least to the level of Dr. Lumpkin in CDER, and the conclusion was that we could not approve a product without some data on safety and efficacy.

I told ABBOTT that, as of this moment, all three supplements were not approvable. However, if the firm wanted to get the 25% dextrose in plastic syringe on the market, we could approve [SCP-005] if the draft labeling were revised for use only in adults as in the approved 50% dextrose product. The firm gave reasons why this would not be viable commercially. Dr. Colman and I suggested to Drs. Willer and Barton that they request a search of the literature earlier than 1966.

Following Dr. Barton's comment that hospitals routinely used 25% dextrose in neonates and infants and guidance to this effect is found in medical textbooks, Dr. Colman inquired as to the documentary support used as the basis for recommendations in medical texts for such use. Tom Willer asked if it would be useful to provide safety information from the firm's database of adverse event reports, and FDA said that it would not be sufficient but that literature reports previously discussed were essential. Ultimately, Dr. Barton said she would ask the librarian today to search the pre-1966 literature. Dr. Willer and she agreed to have the results by November 5. Dr. Willer will fax and mail the results on Friday, November 6.

/S/

Enid Galliers

Cc: Orig. NDA 19-445
HFD-510/division file
HFD-510/EColman/SMcCort

NDA 19-445/S-006

MAR 11 1998

Abbott Laboratories
Hospital Products Division
Attention: Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
D-389 Bldg. AP30
200 Abbott Park Road
ABBOTT PARK, ILLINOIS 60064-3537

APPEARS THIS WAY
ON ORIGINAL

Dear Dr. Willer :

We acknowledge receipt of your supplemental application for the following:

Name of Drug Product: 25% Dextrose Injection in PET Abboject Vials

NDA Number: NDA 19-445

Supplement Number: S-006

Therapeutic Classification: Standard

APPEARS THIS WAY
ON ORIGINAL

Date of Supplement: November 21, 1997

Date of Receipt: November 25, 1997

This supplement provides for a new indication in the treatment of acute symptomatic episodes of hypoglycemia in the neonate or older infant to restore depressed blood glucose levels and control symptoms.

For administrative convenience this submission is being split into three supplements (S-004, S-005 & S-006). S-004 (A new sub-population neonates/infants and as a mininal source of carbohydrate calories) and S-005 (A new strength, 25% Dextrose) were acknowledged previously in a letter dated December 5, 1997.

This application was filed under section 505(b) of the Act on January 24, 1998, in accordance with 21 CFR 314.101(a).

APPEARS THIS WAY
ON ORIGINAL

All communications concerning this supplemental application should be addressed as follows:

Food and Drug Administration
Center for Drug Evaluation and Research
Division of Metabolic and Endocrine Drug Products, HFD-510
Attention: DOCUMENT CONTROL ROOM
5600 Fishers Lane
Rockville, Maryland 20857

If you have any questions, please contact Steve McCort, Project Manager, at (301) 827-6415.

Sincerely yours,

/S/ 3-11-98

APPEARS THIS WAY
ON ORIGINAL

Enid Galliers
Chief, Project Management Staff
Division of Metabolic and
Endocrine Drug Products, HHF-510
Office of Drug Evaluation II
Center for Drug Evaluation and Research

cc:
NDA 19-445/S-006
HFD-510/Div. Files
HFD-510/CSO/S.McCort
DISTRICT OFFICE

APPEARS THIS WAY
ON ORIGINAL

Drafted by: smm /March 10, 1998/
Final: smm/March 10, 1998

SUPPLEMENT ACKNOWLEDGEMENT (AC)

Food and Drug Administration
Rockville MD 20857

NDA 19-445/S-004 + S-005

ABBOTT LABORATORIES, INC.
D-389, Bldg. AP 30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

DEC - 5 1997

Attention: Thomas F. Willer, Ph.D., Assistant Director, Regulary Affairs

APPEARS THIS WAY
ON ORIGINAL

Dear Dr. T. F. Willer:

We acknowledge receipt of your supplemental application for the following:

Name of Drug: Dextrose 50% Injection in PET Abboject Vial

NDA Number: 19-445

Supplement Number: S-004 (New population and dosage information)
S-005 (New Strength)

Date of Supplement: November 21, 1997

APPEARS THIS WAY
ON ORIGINAL

Date of Receipt: November 25, 1997

Unless we find the application not acceptable for filing, this application will be filed under Section 505(b)(1) of the Act on January 24, 1998, in accordance with 21 CFR 314.101(a).

All communications concerning this NDA should be addressed as follows:

Center for Drug Evaluation and Research
Division of Metabolic and Endocrine Drug Products, HFD-510
Office of Drug Evaluation II
Attention: Document Control Room 14B-19
5600 Fishers Lane
Rockville, MD 20857

Sincerely.

/S/

Enid Galliers
Chief, Project Management Staff
Division of Metabolic and Endocrine
Drug Products, HFD-510
Office of Drug Evaluation II
Center for Drug Evaluation and Research

cc:
Original NDA 19-445/S-004 + S-005
HFD-510/Div. Files
HFD-510/CSO/Mc Cort

filename: C:\DATA\WPFILES\19445ACK.

SUPPLEMENT ACKNOWLEDGEMENT

APPEARS THIS WAY
ON ORIGINAL

NDA SUPPLEMENT ORIGINAL

ABBOTT

NDA NO. 19445 REF. NO. 004 - 005
NDA SUPPL FOR SCP ~~SE5-004~~ SE5-004 + SCF-005

Hospital Products Division
Abbott Laboratories
D-389, Bldg. AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

November 21, 1997

CENTER FOR DRUG EVALUATION AND RESEARCH
DIVISION OF METABOLISM AND ENDOCRINE
DRUG PRODUCTS, HFD #510
Attn: DOCUMENT CONTROL ROOM #14B-19
5600 Fishers Lane
Rockville, Maryland 20857

ATTENTION: Solomon Sobel, M.D.
Director

Re: NDA 19-445 50% Dextrose Injection in PET Abboject Vials

Abbott Laboratories hereby supplements the above-referenced new drug application to provide for a 25% dextrose concentration (25% Dextrose Injection, USP) in a 10 mL polypropylene plastic syringe. Abbott Laboratories is filing this supplement in accordance with CDER guidance concerning packaging changes from glass to plastic containers for established drug products. The Agency has determined that the process for submitting currently approved small volume parenteral products in glass containers to be packaged in plastic containers shall be via a supplemental application. We include for your reference a copy of a guidance letter pertaining to this supplement from Dr. Roger Williams, CDER, to Dr. Thomas Willer, Abbott Laboratories, dated September 3, 1996. Please see Exhibit I. This letter in Part 3, "Products for which there is no approved referenced listed drug," states that 25% Dextrose Injection, USP, may be submitted to NDA 19-445. The letter also discusses the package insert indications section. We provide a rationale concerning the applicability of the 25% concentration. Please see Exhibit II.

We provide the chemistry, manufacturing and controls information for this submission. We have previously submitted a complete documentation package supporting the polypropylene plastic syringe container. This supplement (S-002) for a 50% Dextrose Injection, USP, was submitted on May 30, 1996. The subject drug is an drug product. The dosage form and manufacturing site may be described as follows:

Abbott List Number	Concentration	Fill Volume	Size/Type Container	Manufacturing Facility
1775	250 mg/mL Dextrose, USP	10 mL	10 mL, Polypropylene Plastic Syringe	

The subject drug is a prescription drug and not an over-the-counter drug. Abbott Laboratories' Hospital Products Division will manufacture the 10 mL finished dosage form in Building R2 at its currently approved Please refer to for a full description of this Abbott Laboratories, Hospital Products Division facility.

We request twenty-four months expiration dating for this product based on the accelerated stability data enclosed herein. At the request of the Agency, we will provide samples of the bulk drug substance and finished dosage form.

We include a complete data package in support of this application as itemized in the Table of Contents.

We trust that this submission is complete and this submission can be expeditiously approved. Please telephone me if you have any questions or need additional information concerning this submission at your earliest convenience.

Sincerely,

ABBOTT LABORATORIES

Thomas F. Willer

REVIEWS COMPLETED

CSO ACTION:
☐ LETTER ☐ N.A.I. ☐ MEMO

CSO INITIALS DATE

APPEARS THIS WAY
ON ORIGINAL

Thomas F. Willer, Ph.D.
Assistant Director, Regulatory Affairs
Hospital Products Division
Phone: (847) 937-6845
Fax: (847) 938-7867
Internet: WILLETF@hpd.abbott.com

APPEARS THIS WAY
ON ORIGINAL

TFW:tw

g:dex1775.tfw/1-2
Attachment

EXHIBIT I

LETTER FROM DR. R. WILLIAMS, CDER,

TO DR. T. WILLER, ABBOTT LABORATORIES

DATED SEPTEMBER 3, 1996

TOPIC OF LETTER:

CONCERNING APPLICATIONS FOR PRODUCTS

IN NEW PLASTIC SYRINGES

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Food and Drug Administration
Rockville MD 20857

Thomas F. Willer, Ph.D.
Manager, Regulatory Affairs
Hospital Products Division
Abbott Laboratories
Dept. 389, AP30
200 Abbott Park Road
Abbott Park, Illinois 60064-3537

SEP - 3 1996

APPEARS THIS WAY
ON ORIGINAL

RE: Applications for Products in New Plastic Syringes

Dear Dr. Willer:

This responds to your inquiry to Dr. Marilyn Apfel concerning the types of applications that should be submitted for approval of certain drug products that you propose to package in prefilled syringes made of a new plastic material.

We have applied the following general policies in reaching the decisions outlined below for each individual product:

1. Applications for approval of small volume parenteral (SVP) products to be packaged in new plastic syringes may be submitted as ANDAs under section 505(j) or AADAs under section 507 of the Federal Food, Drug, and Cosmetic (FD&C) Act if there is an approved reference listed drug product in the current edition of the publication Approved Drug Products with Therapeutic Equivalence Evaluations (the Orange Book), and provided that approval of the product does not require studies beyond limited confirmatory testing. Limited confirmatory testing means simple studies intended to rule out unlikely problems. In some cases limited confirmatory testing may include acute animal studies. However, a study to answer basic safety or effectiveness questions or a study that would require substantial scientific review would not be considered limited confirmatory testing. If there are toxicology issues associated with the new previously unapproved plastic that require animal studies beyond limited confirmatory testing or the testing described in the USP to show that the drug product is safe, then an abbreviated application under section 505(j) or section 507 is not appropriate, and an NDA or supplement under section 505(b) or section 507 should be submitted. The concentration and total volume of the proposed product must be the same as for the approved product.

2. If you have an approved ANDA for a product packaged in vials or ampules, a separate ANDA is required for approval of that product packaged in a prefilled syringe.

3. Separate ANDAs are required for each container material (glass and plastic).

4. If Abbott holds an approved NDA for the same product in a different container, a supplement to the NDA should be submitted for the product in the new plastic syringe.

We have reviewed the list of products you provided to Dr. Marilyn Apfel in your October 31, 1994, letter. We have added Iopamidol Injection, USP, 51%, and Verapamil Hydrochloride Injection, USP, 10 mg/mL, to the list based on your February 15, 1996, telephone conversation with Mr. Thomas Hassall. We have separated the products into three groups: 1) products for which Abbott currently holds an approved NDA or ANDA for marketing the products in a vial or in a prefilled syringe made of either glass or a different plastic material; 2) products for which Abbott does not currently have approved NDAs or ANDAs but for which a reference listed drug exists; and 3) products for which there is no approved reference listed drug. Our conclusions concerning the appropriate type of application to be submitted for each product you proposed are summarized below. ANDAs may be submitted, where recommended, below provided there are no toxicology issues associated with the new plastic that require animal studies beyond limited confirmatory testing or the testing described in the USP to show that the product is safe.

1. **Products for which Abbott holds approved NDAs or ANDAs:**

a. Bretylium Tosylate Injection, USP, 50 mg/mL

Abbott's NDA 19-030 is approved for marketing Bretylium Tosylate Injection, USP, 50 mg/mL in a 10 mL, plastic vial. The proposed product in the new plastic syringe should be submitted as a supplemental application to this NDA.

b. Furosemide Injection, USP, 10 mg/mL

Your application, number 18-667, is an ANDA under which you have approval to market Furosemide Injection, USP, 10 mg/mL, in prefilled glass syringes. Under present policy, you should submit a separate ANDA for approval of Furosemide Injection, USP in the new plastic syringe.

c. Lidocaine HCl Injection, USP 1%

ANDA 88-299 is approved for marketing Lidocaine HCl Injection, USP 1% in 20 mL, 30 mL, and 50 mL plastic vials. A separate ANDA should be submitted for approval of Lidocaine HCl Injection, USP, 1% in the new prefilled plastic syringe.

d. Lidocaine HCl Injection, USP 2%

ANDA 83-158 provides for marketing this product in the Abboject® glass syringe and the "Universal Additive Syringe," also a glass package. Because the proposed product is to be packaged in a plastic syringe, our present policy requires you to submit a new ANDA.

e. Sodium Chloride Injection, USP, 0.9%

Abbott's NDA 19-218 is approved for marketing 0.9% Sodium Chloride Injection, USP, in plastic syringes. You should submit a supplemental application to NDA 19-218 for the proposed product in the new plastic syringe.

f. Sterile Water for Injection

Abbott's NDA 18-801 is approved for marketing Sterile Water for Injection in 10 mL, 20 mL, and 50 mL plastic vials. You should submit a supplement to NDA 18-801 for approval of Sterile Water for Injection in the new plastic syringe.

g. Verapamil Hydrochloride Injection, USP, 2.5 mg/mL

You currently have approved ANDAs for Verapamil Hydrochloride Injection, USP, 2.5 mg/mL in glass vials, glass ampules, and glass syringes. If you intend to replace the glass syringe with the new plastic syringe you may submit a supplement for the new container closure system to the ANDA for the glass syringe. If you intend to add the product packaged in the new plastic syringe to your existing product line, you must submit a new ANDA.

c. Dextrose Injection, USP (25%)

Abbott has an approved NDA for Dextrose 50% Injection in a plastic Abbojectᵉ syringe (NDA 19-445) but not for Dextrose 25% Injection. Section IIB of FDA's interim guidance document dated July 12, 1993, "Separate Marketing Applications and Clinical Data for Purposes of Assessing User Fees Under the Prescription Drug User Fee Act of 1992," addresses the kinds of changes to an approved NDA that may be submitted as supplements. It states that changes based on chemistry, manufacturing or controls data that change the strength or concentration should be submitted as supplements [section II(B)(2)]. Therefore, Dextrose Injection, USP, 25% in the new syringe may be submitted as a supplement to NDA 19-445. The guidance also directs the submission of supplements for requests for approval of a new indication or a modification of a previously approved indication [section II(B)(3)]. If the 25% product bears a different indication (for example, use for a different condition or population with different recommendations pertaining to dose or dosage regimen), a separate efficacy supplement supported by appropriate clinical data would also be required. An efficacy supplement that requires clinical data as defined in the PDUFA would normally be subject to an application fee under the Prescription Drug User Fee Act of 1992 (PDUFA).

The applications in group three would be expected to be subject to user fees under the PDUFA.

If you have any questions with respect to these recommendations, please contact Dr. Marilyn Apfel at (301) 594-5460.

Sincerely,

/S/

APPEARS THIS WAY
ON ORIGINAL

Roger L. Williams, M.D.
Deputy Center Director for Pharmaceutical Science
Center for Drug Evaluation and Research

APPEARS THIS WAY
ON ORIGINAL

EXHIBIT II

MEDICAL RATIONALE

FOR 25% DEXTROSE INJECTION, USP

MEDICAL RATIONALE

FOR 25% DEXTROSE INJECTION, USP

Both the proposed 25% Dextrose Injection, USP, in 10 mL polypropylene plastic syringe, and 50% Dextrose Injection, USP, in polypropylene plastic syringe, solutions are used in the treatment of hypoglycemia. The 50% Dextrose Injection, USP, calls out the hypoglycemia as caused by hyperinsulinism or insulin shock. Under the exemptions for grandfathered drug products in glass containers, Abbott Laborarories currently markets a 25% Dextrose Injection, USP, (List No. 7898), in 10 mL glass container. The 25% Dextrose Injection, USP, insert (List No. 7898) is nonspecific.

Package inserts for both dextrose concentrations also note that the solutions can be used as a source of carbohydrate categories (minimal source in the infant). Both inserts emphasize that the solutions must be given slowly (italicized wording therein).

Essentially you have two products used for treatment of hypoglycemia. The 50% concentration insert does not note any age restrictions. The 25% concentration would be more appropriate for the neonate/infant because it is sufficiently nonirritating when administered slowly per the package insert. The 25% concentration is specific to the subset of the population, namely, neonate and older infant for treatment of acute symptomatic episodes of hypoglycemia.

CONCLUSION

The two concentrations of Dextrose Injection, USP, namely 25% and 50%, contain the same indications and overlap the intended patient population.